

THE UNIVERSITY OF CHICAGO

1. A slider for supporting a transducing head proximate a rotating disc, the slider comprising:

a slider body, including a primary air bearing and a secondary air bearing, the slider body having a disc opposing face bounded by a leading edge and a trailing edge wherein the transducing head is located on the disc opposing face proximate the trailing edge and on the secondary air bearing;

and

means for permitting vertical movement of the transducing head with respect to the slider body in response to local disc surface topography to maintain head media spacing (HMS) between the transducing head and the disc substantially constant as the slider flies above the disc.

2. The slider of claim 1 wherein the means for permitting vertical movement of the transducing head is an interface connecting the primary air bearing to the secondary air bearing.
3. The slider of claim 2 wherein the interface displaces the secondary air bearing vertically with respect to the primary air bearing.
4. The slider of claim 2 wherein the interface substantially surrounds the secondary air bearing.
5. The slider of claim 2 wherein the interface is less stiff than the primary air bearing.

[illegible]

7. A slider for supporting a transducing head proximate a rotating disc, the slider comprising:

a secondary air bearing having a disc opposing face bounded by a front edge and a second trailing edge wherein the air bearing surface is defined on the disc opposing face, the air bearing surface having a pad proximate the second trailing edge wherein the transducing head is located on the pad; and

8. The slider of claim 7 wherein the interface substantially surrounds the secondary air bearing.

9. The slider of claim 7 wherein the interface is less stiff than the primary air bearing.

10. The slider of claim 7 wherein the primary and secondary air bearings comprise a first material and the interface comprises a second material, the first material being more stiff than the second material.
11. The slider of claim 7 wherein the interface has a first surface at the disc opposing face of the primary air bearing, and the slider further comprises at least one spring etched into the first surface of the interface.
12. The slider of claim 7 wherein the primary and secondary air bearings have a first thickness and the interface has a second thickness, the first thickness being greater than the second thickness.
13. The slider of claim 7 wherein the pad modulates in response to local disc surface topography to maintain the HMS substantially constant.
14. The slider of claim 7 wherein the interface comprises a spring connecting the secondary air bearing to the primary air bearing and a gap is formed between the primary and secondary air bearings.
15. The slider of claim 14, and further comprising:
 - a first actuation comb attached to the primary air bearing and lying within the gap; and
 - a second actuation comb attached to the secondary air bearing and lying within the gap wherein the first and second actuation combs are interwoven.
16. The slider of claim 15 wherein the first and second actuation combs are electro-static combs.

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A slider for supporting a transducer comprising:

- a slider body having a longitudinal edge and a longitudinal face;
- an air bearing surface on the longitudinal face;
- an interface defined in the longitudinal face wherein the transducer is mounted;
- an interface defined in the longitudinal face wherein the transducer is mounted;
- the transducer;
- transducing means for transducing the movement of the transducer;
- maintain the transducer in contact with the air bearing surface;
- transducing means for transducing the movement of the transducer;
- slider flies about the longitudinal edge.

a slider body having a disc opposing face bounded by a leading edge and a trailing edge, the slider body having a longitudinal axis;

an interface defined in the slider body and substantially surrounding the transducing head wherein the interface displaces the transducing head vertically with respect to the slider body to maintain head media spacing (HMS) between the transducing head and the disc substantially constant as the slider flies above the disc.

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17 wherein the slider body comprises a first material and a second material, the first material being more rigid than the second material.

20. The slider of claim 17 wherein the interface has a first surface at the disc opposing face of the slider body, and the slider further comprises at least one spring etched into the first surface of the interface.

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21. The slider of claim 17 wherein the slider body has a first thickness and the interface has a second thickness, the first thickness being greater than the second thickness.
22. A slider for supporting a transducing head proximate a rotating disc, the slider comprising:
- a primary air bearing having a disc opposing face bounded by a leading edge and a rear edge;
 - a secondary air bearing having a disc opposing face bounded by a front edge and a trailing edge;
 - an air bearing surface defined on the disc opposing faces of the primary and secondary air bearings, the air bearing surface having a pad proximate the trailing edge of the secondary air bearing wherein the transducing head is located on the pad; and
 - a spring connecting the front edge of the secondary air bearing to the rear edge of the primary air bearing wherein the interface displaces the transducing head vertically with respect to the primary air bearing to maintain head media spacing (HMS) between the transducing head and as the disc substantially constant as the slider flies above the disc.
23. The slider of claim 22 wherein a gap defined between the primary air bearing and the secondary air bearing, and further comprising:
- a first actuation comb attached to the primary air bearing and lying within the gap; and

24

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combs are interwoven.

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